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OPTIONAL FORM 99 (7-90)

1. 10. 1996 1912

## FAX TRANSMITTAL

# of pages 7

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September 16, 1996

File:BLMU9166

Mr. Rex Rowley  
Area Manager  
Bureau of Land Management  
House Range Resource Area  
35 East 500 North, P.O. Box 778  
Fillmore, UT 84631

Fax No. 801-743-5112 - 7 PAGES

RE: Amended Plan of Operations for the Drum Mine as requested in BLM's  
letter dated August 1, 1996

Dear Mr. Rowley:

This amended reclamation plan was requested in the BLM's letter dated August 1, 1996, and covers all areas that are currently bonded by Jumbo Mining with the Division of Oil, Gas and Mining (DOGM).

Active leaching of some of the heaps at the Drum Mine was shut down in September, 1988, and of all of the heaps in October, 1990, pursuant to an order issued to the then operator, Western States Minerals Corporation, by the Division of Water Quality (DWQ). Since that time Jumbo has actively conducted 'mining operations' (as defined by the DOGM regulations, R647-I-106 Definitions), primarily by conducting exploration and development work.

Jumbo plans for future mining at the Drum Mine are to construct a new heap and move the old heap material from heaps 1 through 5 (heaps bonded by Jumbo) onto the new heap. Final reclamation for all facilities would be covered under the new heap plan of operations. If, for whatever reasons, future mining does not commence, all disturbed areas under Jumbo's bond, will be reclaimed as provided by under this and any future amended plans of operations.

The original plan of operations filed with the BLM by Western covered 2 pits, 3 heaps, 2 solution ponds, 2 waste dumps (these dumps are still covered by Western States' bond), powder magazine/road, diversion ditch, maintenance shop, strip plant, mine office and miscellaneous (roads, etc.), all of which

comprised approximately 85 acres. Western States subsequently constructed seven additional heaps that were not covered in the original POO submitted to the BLM, nor in any subsequent amendment, so far as we can ascertain. Of the seven heaps, only two, heaps 4 and 5 (actually only one heap), are currently under Jumbo's bond for reclamation.

This amended plan will cover the reclamation of heap 4/5 as well as a discussion of the current discharge from the heaps and time frames for future work at the site.

#### **SUMMARY OF 1983 POO RECLAMATION PLAN**

**Pits:** The highwalls of the pits will be bermed for safety purposes ( this was completed in 1989 by Jumbo). The walls will remain in place with an overall slope of 47 degrees.

**Heaps:** The heaps were to be detoxified using current technology and then regraded and reshaped to approximately original contour (2:1 slope). Topsoiling and reseeding (15-20 pounds per acre) was only suggested if needed to reestablish vegetation.

**Waste Dumps:** Except for the trash disposal trench, the waste dumps were never used by Jumbo and still remain under Western States' bond. For all previously mined areas, the waste rock generated by Jumbo was and will be used as backfill into the existing pits.

**Other:** The ponds, ditches, and recovery plant will be regraded and reshaped to approximately original contour and then reclaimed.

Jumbo has agreed to, and bonded with DOGM for, reclamation additional to that previously provided under the 1983 POO, consisting of (1) reclaiming and reseeding all accessible ramps in the pits, (2) backfilling all underground workings in the South Pit (several thousand tons of waste rock has already been placed above and near the portals ready for backfilling), and (3) committing to topsoiling and revegetating heaps 1 through 4/5.

The reclamation plan for all of the heaps will be in accordance with the BLM's Manual Handbook H-3042, "Solid Minerals Reclamation Handbook" and the BLM's Draft Management Cyanide Program. The amount of disturbance for the heaps and other areas is as shown on the DOGM/Jumbo reclamation map.

**Detoxification of Heaps:** Sprinkling of the heaps bonded by Jumbo was stopped on October 1, 1990, and the heaps were allowed to drain. For a period of two weeks prior to the shutdown, no cyanide or lime was added to the

leaching solutions and the pH dropped from the 10.5-11.0 range to the 9.0-9.5 range.

While sampling by the BLM's consultant, Kimmel King, in 1995 showed slightly elevated levels for total cyanide, no analysis for WAD cyanide was requested, and the metals content in the solutions was shown to be within drinking water standards for the discharge of heap 4/5, the upper berm (water has since evaporated) and the preg pond. According to the BLM's manual (section VIII, page 22 of H-3042-1) and the BLM's Draft Cyanide Management Plan (section V, A1-A2, B3) heaps are considered detoxified when the effluent from the heap contains WAD cyanide (not total cyanide) of less than 0.2 ppm and metal concentrations below drinking water standards. Subsequent sampling of heap 4/5's effluent in June 1995, eight days after a major storm, (final draindown) showed that the WAD cyanide (0.048 ppm) and metals were well below drinking water standards (see copy of the analytical report). It should be noted that effluent sampling after a storm is the preferred method recommended by the BLM (page 32, section VIII of handbook H-3042-1) to evaluate heap detoxification.

Since the effluent from a final draindown after a storm contained WAD cyanide and metal concentrations well below drinking water standards, Jumbo considers the heaps to be detoxified according to the BLM's standards. Nevertheless, monitoring of the discharge will continue until reclamation occurs, and post reclamation monitoring will be conducted (see monitoring plan below).

Recontouring of Heaps: Proposed heap reclamation guidelines provide that prior to recontouring, the heap liners are to be perforated to prevent water buildup inside the heap as required by the BLM (section V, B7 of the BLM Draft Cyanide Management Program). However, in this case, the old heaps were constructed from "mine run" ore, which contained large boulders, which in turn provided for excellent drainage through the heaps. Thus, we believe that liner perforation should not be required in this instance.

The sides of the heap will be resloped to a grade no steeper than 2h:1v (page 32, section VIII of handbook H-3042-1). Detoxified material will be pushed off the liner in order to achieve slope reduction. The top of the heap will be sloped to prevent ponding of water.

Topsolling and Revegetation: After recontouring of the heaps has been completed, six inches of available topsoil will be placed on tops and the sides of the heaps. Previous revegetation test plots using six inches of topsoil indicate that hand broadcasting and scarifying using a seed mixture of wheat grass and four-wing saltbrush provided the best results for revegetation. Seeding rates will be 20 pounds per acre.

**Acid Water Drainage Potential:** Due to the high amount of oxidized limestone on the heap and the previous use of lime as a pH control, the generation of acid water from these heaps can be ruled out. This conclusion is verified by the fact that all discharges from the heaps since shutdown in 1990 have been alkaline (pH 8.0-9.0).

#### **PRE AND POST RECLAMATION MONITORING OF HEAP DISCHARGE**

The BLM is concerned that our heaps might be releasing contaminants into the ground. As discussed above, the effluent from heap runoff in July, 1996 (last heap runoff due to the lack of rain) contained WAD cyanide and metals below drinking water standards. Jumbo considers this to be direct evidence that the heaps are detoxified according to BLM regulations and guidelines. Nevertheless, Jumbo will continue to monitor the heaps to provide on-going verification.

Fortunately, we have a three-fold monitoring system (see Figure 1) which we can sample to determine the quality of the water discharging from the heaps. The first monitoring point is runoff from heaps into the preg pond during the draindown after a major rainstorm. The second monitoring point is the leak detection system, which are a series of drainage pipes that lie beneath the heap liner, and may provide samples for some of the old heaps. The third monitoring system is provided by an impervious geological formation, which underlies the heaps. This provides a 22' thick perched saturation zone into which Jumbo has drilled several monitoring holes for sampling purposes.

Heap runoff will be sampled after a major storm. The leak detection pipes will be sampled anytime drainage is noted. The perched saturation zone which lies between 6' and 80' below the surface will be sampled at approximately quarterly intervals until three consecutive reports show no excess of ground water/regional limits.

Any leaks through the liner will be contained in the perched saturation zone and by sampling the saturation zone periodically, a history of water quality can be maintained. Sampling of the saturation zone in June 1995 showed that WAD cyanide and metals were below drinking water standards. These results also demonstrate that any leakage from the heaps during the past six years has not contaminated the water in the perched saturation zone. We contend that this is the best possible evidence under the circumstances that the heaps have been detoxified to BLM's standards. The latest sampling of the saturation zone was just completed under the BLM's supervision on August 10, 1996, and the results should be available within a few days.

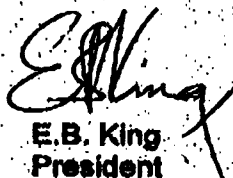
#### **TIME FRAME FOR FUTURE ACTIVITIES**

As stated above, it is Jumbo's intention to construct a new heap which will hold proven new ore reserves, as well as the old material from heaps 1 through 5. Our Geotechnical Consultant, Dr. Evert Lawton of the University of Utah, is currently finalizing all engineering documents required to obtain permits for the new heap from the DWQ. After obtaining the necessary permits from DWQ, we will finalize our new Plan of Operation with the BLM (originally filed with the BLM in 1990). Meanwhile, we will continue to explore the district for additional reserves and to conduct other required developmental work. We have completed several drilling projects since the suspension of leaching in 1990, and a new drilling program on nearby State land will start in a few weeks.

We estimate that six to nine months will be needed in order to obtain all the necessary permits and to determine new bonding amounts. Additional time may be needed depending on the amount of new ore discovered in the upcoming drilling project. It is our expectation that after our lawsuit with Western has been resolved, we will be able to obtain the necessary financing to restart more active mining operations, beginning sometime in 1998.

Should we not be able to commence with mining operations in 1998, Jumbo will start closure of all disturbances currently under Jumbo's bond and will complete reclamation within one to three years afterwards.

Sincerely,

  
E.B. King  
President

cc: DH, Drum Mine  
ZL Samay, Esq.  
James W. Carter, DOGM

09/23/96

13:38

FROM ASOMA INSTRUMENTS, INC. 512

-3421 ADH

09.18.1996 19:26

From : JUMBO/DRUM 881854436

Sep. 16. 11

02:43 PM

P01

# DRUM MINE HEAP DISCHARGE MONITORING

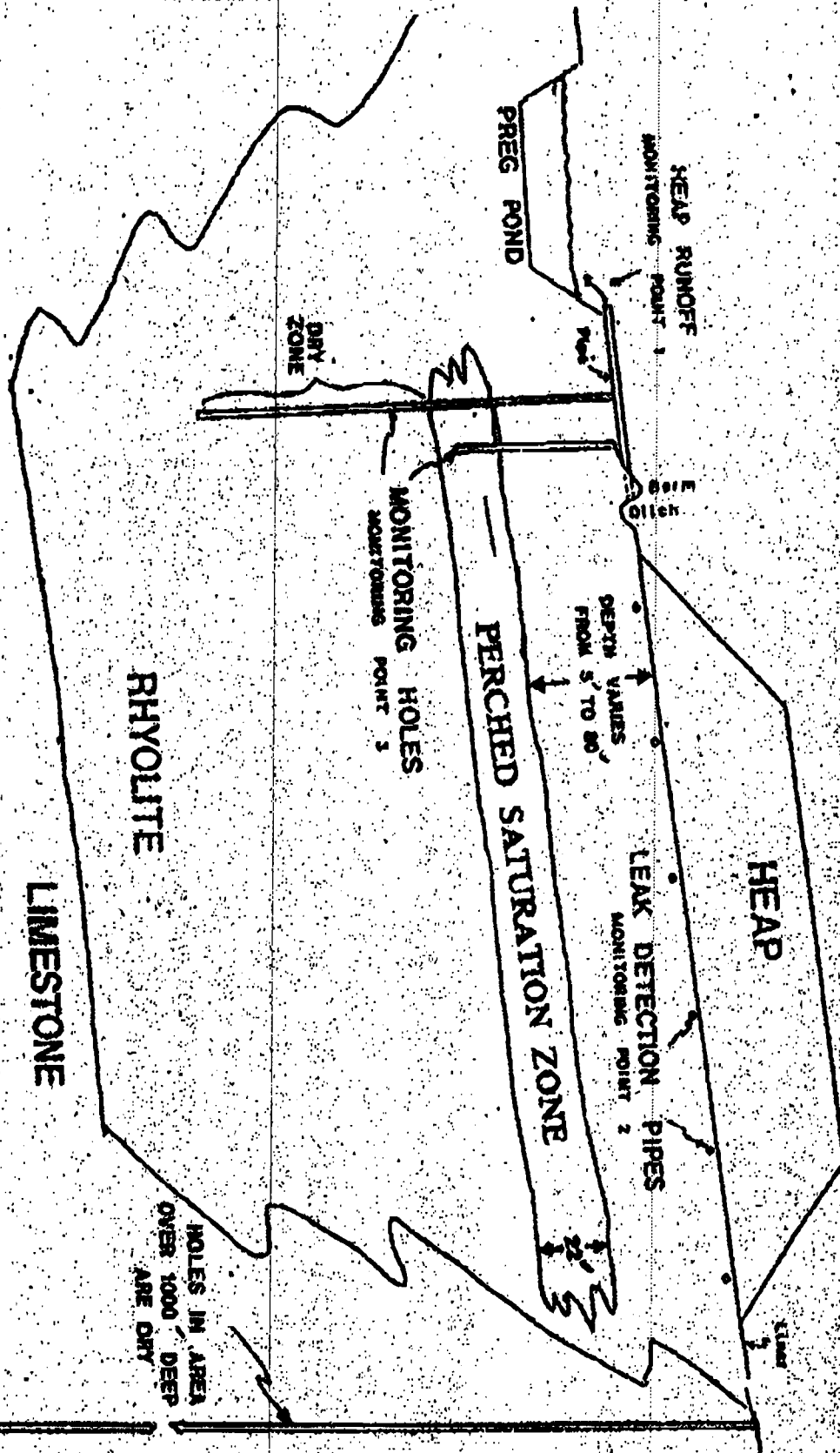


FIG 1





**AMERICAN  
WEST  
ANALYTICAL  
LABORATORIES**

Client: Jumbo Mining  
Date Sampled: June 27, 1995  
Lab Sample ID.: 22964-01  
Field Sample ID.: Drum Mine#1 4/5

**Comment:** Ed King  
**Date Received:** June 28, 1995  
**Received By:** Elena Hayward  
**Set Description:** Three Water Samples

# INORGANIC ANALYSIS REPORT

## Analytical Results

TOTAL METALS		Method Used	Detection Limit	Amount Detected
463 West 3600 South Salt Lake City, Utah 84115	Arsenic	7060	0.005	0.033
	Cadmium	6010	0.004	<0.004
	Chromium	6010	0.01	<0.01
	Lead	6010	0.05	<0.05
	Mercury	7471	0.001	<0.001

## OTHER CHEMISTRIES

Chloride	4500 CLB	0.5	2,200.
Cyanide (Total)	335.3	0.005	0.35
Cyanide (WAD)	335.3	0.005	0.048
Nitrate (as N)	353.2	0.01	99.
TDS	160.1	1.0	7,000.

**Released by:**

## Laboratory Supervisor

**Report Date 7/13/95**

1 of 1

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\*\*\*END\*\*\*